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ABSTRACT

The fifth of a series of six monographs provides followup data on 467 former students of three postsecondary vocational technical programs for the deaf. Introductory information includes objectives of the study (such as providing developing postsecondary programs with guidelines for establishing programs for the deaf) and a summary of the contents of each monograph in the series. Presented are data on Ss' areas of training, status (including the number of graduates, withdrawals, job placement status, and geographic origin). Among conclusions noted are that although there is a broadened range of postsecondary course offerings available, students tend to be placed in a limited number of subject areas, and that placement tends to be along sex lines. (LS)

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POST SECONDARY PROGRAMS FOR THE DEAF: V. Follow-Up Data Analysis

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Research, Development and Demonstration
Center in Education of Handicapped Children
Minneapolis, Minnesota

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The research reported herein was performed pursuant to a grant from the Bureau of Education for the Handicapped, U.S. Office of Education, Department of Health, Education, and Welfare to the Center of Research, Development and Demonstration in Education of Handicapped Children, Department of Psychoeducational Studies, University of Minnesota. Contractors undertaking such projects under government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official position of the Bureau of Education for the Handicapped.

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RESEARCH, DEVELOPMENT AND DEMONSTRATION CENTER IN EDUCATION OF HANDICAPPED CHILDREN

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The University of Minnesota Research, Development and Demonstration Center in Education of Handicapped Children has been established to concentrate on intervention strategies and materials which develop and improve language and communication skills in young handicapped children.

The long term objective of the Center is to improve the language and communication abilities of handicapped children by means of identification of linguistically and potentially linguistically handicapped children, development and evaluation of intervention strategies with young handicapped children and dissemination of findings and products of benefit to young handicapped children.

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We extend our appreciation to Dr. Ben Hoffmeyer, Headmaster of the American School for the Deaf for granting us free access to the American School's Historical Library and to Jane Wilson, American School librarian for her assistance.

Finally, this project could not have been undertaken without the cooperation of hundreds of parents, vocational rehabilitation counselors, young deaf people and employers. We hope in return this project will have made a contribution to them by bringing the current occupational status of young deaf people into focus and recommending courses of action designed to evaluate their status and permit them to become even more productive members of society.

Foreword

The University of Minnesota Research, Development and Demonstration Center in Education of Handicapped Children became involved in the evaluation of post-secondary programs in July 1972, several years after the three programs in consideration had been established. The charge to the Center was to develop, in cooperation with the programs in New Orleans, Seattle and St. Paul, mechanisms by which to identify those components necessary for the development and maintenance of successful post-secondary vocational technical programs for the hearing impaired students.

A special debt of gratitude is owed to the three programs for their willingness to cooperate with an "outside" evaluation team rather than follow the more traditional mode of self-evaluation. We hope that whatever inconvenience the programs may have experienced will be compensated for by the results of the evaluation.

The evaluation was made possible through the cooperation of two federal agencies, the Bureau of Education of the Handicapped (BEH) and Social and Rehabilitation Services (SRS). We gratefully acknowledge the support and advice of Max Mueller of BEH and Edna Adler and Deno Reed of SRS. Of primary importance, of course, has been the interest and support of Boyce Williams, Chief of the Department of Communication Disorders at SRS. Without his leadership, the substantial gains made in vocational technical training for the deaf would have been of a more limited nature.

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INTRODUCTION

Background

The present paper represents the fifth of a series of six monographs produced as a result of an evaluation of three federally funded post-secondary vocational technical programs for deaf students. The programs are:

1) Delgado Community College, New Orleans, Louisiana;
2) Seattle Community College, Seattle, Washington;
3) Technical Vocational Institute, St. Paul, Minnesota.

Monograph I, Post Secondary Programs for the Deaf: Introduction and Overview, contains a complete description of the three programs.

The study was designed with the following objectives:

(1) To provide developing post-secondary programs with guidelines for establishing programs for the deaf.

(2) To determine as precisely as possible the nature of the three demonstration projects in relation to:

   a) Population served
   b) Courses of study offered
   c) Supportive services provided
   d) Cost of services

(3) To determine the effectiveness of the type of post-secondary programming offered by the three demonstration projects in:

   a) Course success
   b) Employment success
   c) Attrition
   d) Comparison of student and non-student success

(4) To consider student characteristics in an attempt to derive implications for specific instructional vocational procedures.

The objectives may be seen as encompassing two components. The first deals with the three existing federally funded demonstration

programs. Formative process evaluation was conducted as a means of increasing the effectiveness of ongoing programs. The final outcome of the project, based on the summative evaluation of the demonstration programs, is concerned with establishing guidelines for new programs.

In addition to program descriptions, Monograph I contains a complete statement of the problem, review of the literature and summary of previous investigations on the vocational status of the deaf. The series was developed to be read sequentially and the reader is advised to be familiar with the contents of Monograph I before reading the present report.

ORGANIZATION OF MONOGRAPH SERIES

Procedures are spelled out in detail in the appropriate sections. Including the present report, six monographs have been developed and comprise the total package. The monographs are as follows:

I. Introduction and Overview
II. External Views of Programs
III. Internal Views of Programs
IV. Empirical Data Analysis
V. Follow-Up Data Analysis
VI. Guidelines and Summary

Monograph I: Introduction and Overview

This report is divided into the following categories:

1. Introduction and Statement of the Problem
2. Review of the Literature
3. Program Descriptions
4. Procedures

Monograph II: External Views of Programs

Material in this monograph is based on results obtained by two sets of interviews and two sets of questionnaires as follows:

1. Interviews of Former Students Now Employed
2. Interviews of Employees' Supervisors
3. Parent Questionnaires
4. Vocational Rehabilitation Counselor Questionnaires

For each category the results are treated separately for each of the three programs (Delgado, Seattle, TVI) as well as on a general basis across programs. The same procedure was followed for all subsequent monographs.

Monograph III: Internal Views of Programs

Material in this section is based on interviews with the following categories of respondents:

1. Current Students
2. Deaf Program Staff
   a) Administrators
   b) Counselors
   c) Preparatory Program Teachers
   d) Interpreters
3. Technical Vocational Teachers/College Training Staff

Monograph IV: Empirical Data Analysis

Empirical data analysis was conducted on two groups, Former Students and Current Students:

1. Former Students
   a) Stanford Achievement Test
   b) General Aptitude Test Battery
   c) IPAT
   d) Wechsler Adult Intelligence Scale

2. Current Students
   a) Stanford Achievement Test
   b) General Aptitude Test Battery
   c) IPAT
   d) Wechsler Adult Intelligence Scale

Monograph V: Follow-Up Data Analysis

The follow-up data consist of information on former students arranged in the following categories:

1. Areas of Training
2. Former Student Status
   a) Graduates
   b) Goal Completions
   c) Withdrawals
   d) Transfers
3. Job Placement
4. Geographic Origin

Monograph VI: Summary and Guidelines

This monograph provides guidelines for the development and monotoring of effective vocational technical programs for the deaf within ongoing programs for hearing students. A summary of the complete study is also provided.

Presentation of follow-up data analysis

Follow-up data were gathered from student files at each of the three programs to determine 1) the number of areas of training in which deaf students are placed, 2) the rate of attrition, 3) overall student job placement status, 4) the geographic scope of each program, 5) reasons for student withdrawal and 6) the male/female enrollment ratio. Each student file was searched to determine country or state of student origin, pupil program entry date, course of study, date of graduation, withdrawal or transfer, reason for withdrawal, name and location of current employer, and congruence between job placement and training.

METHODS AND PROCEDURES

Sample. Selection of former students for inclusion in the sample was based upon the availability of complete data in the file folders maintained by the programs on their students. Complete data were defined by the following categories of information:

Area of training
Former student status
  a) Graduates
  b) Goal completions
  c) Withdrawals
  d) Transfers
Job Placement
Geographic origin

Complete data were available on 467 former students, including 113 males and 48 females from Delgado, 73 males and 41 females from Seattle, and 109 males and 83 females from St. Paul TVI.

Data collection. The collection of data from each of the three programs was initiated during the latter part of March 1973. A staff member from each of the programs searched student files and filled in the information in the follow-up data form (see Appendix A) supplied by the research team. The information was forwarded to the research team. Updating and revision of information continued throughout 1973 and 1974. The updating and revision were accomplished through conversations and correspondence with responsible individuals at each of the programs.

Treatment of data. The data collected and presented here are of a quantitative nature, coded for tabulation and reporting.

RESULTS

Areas of Training

The number of different areas students were placed in ranged from 23 at Delgado to 31 at Seattle, with students at TVI placed in 25 different areas of study. As can be seen in Tables 1, 2, and 3, males were placed in more different training areas than were females. Delgado males were placed in 21 subject areas, females in 7. The Seattle program placed males in 21 areas and females in 16. The TVI program males were placed in 24 different areas, the females in 7. Delgado males were found, for the most part, in the areas of drafting, carpentry, business, plumbing, orthotics/prosthetics, and engineering. Females were placed mainly in the clerical area (52%). Seattle male students were more evenly distributed throughout subject areas, with the welding, drafting, data processing and machine shop categories containing more students than other categories. Female students in the Seattle program were found mainly in the data processing and clerical office practice areas. Male students at St. Paul TVI were heavily placed in the graphic arts and machine tool processes areas. Sixty of 80 (75%) TVI females were placed in the general office practice subject area.

Former Student Status

The status of former students is indicated in Table 4. The category of goal completion is peculiar to Delgado and is defined as that student who has received training to the point necessary to obtain employment. This individual does not necessarily receive a degree or certificate for such training.

Table 1

Placement of Students in Subject Areas at the Delgado Program

Area*	Male	Female	Total
Clerical	1	16	17
Drafting	16	-	16
Carpentry	12	-	12
Business	9	-	9
Plumbing	7	4	7
Data Processing	3	-	7
Engineering**	6	-	6
Orthotics/Prosthetics	5	4	5
Secretarial	-	2	4
Referral	2	3	4
Library Science	1	1	4
Commercial Art	2	-	3
Printing	3	-	3
Machinist	2	-	2
Painting/Decorating	2	-	2
Auto Body	2	-	2
Welding	2	-	2
Cooking/Baking	2	-	2
Auto Mechanics	1	-	1
Graphic Arts	1	-	1
Electronics	1	-	1
Upholstery	1	-	1
Fine Arts	-	1	1
Total	81	31	112

*There were 49 students in the preparatory program, 32 males and 17 females. This was 30.34% of a sample of 161 students.

**Civil Engineering. 2
Electrical Engineering 2
Architectural Engineering 1
Petroleum Engineering 1

Table 2

Placement of Students in Subject Areas at the Seattle Program

Area*	Male	Female	Total
Data Processing	8	8	16
Welding	9	-	9
Drafting	8	-	8
Clerical Office Practice	-	7	7
Machine Shop	7	-	7
Inhalation Therapy	-	4	4
Custom Apparel	1	3	4
Dry Cleaning	4	-	4
Printing	4	-	4
Carpentry	3	-	3
Power Sewing	-	3	3
Dental Technology/ Laboratory	2	1	3
College Preparatory	2	1	3
Horology	3	-	3
Electronics	2	1	3
Diesel Mechanics	2	-	2
Accounting	-	2	2
College Exploratory	1	1	2
Auto Body/Mechanics	2	-	2
College Transfer	2	-	2
Sheet Metal	2	-	2
Baking	2	-	2
Keypunch	-	1	1
Cosmetology	-	1	1
Early Childhood	-	1	1
Cake decorating	-	1	1
Graphic Arts	-	1	1
Chemical Technology	1	-	1
Newswriting	1	-	1
Liberal Arts	-	1	1
Basic Education	1	-	1
Total	67	37	104

*There were 10 students in the preparatory program, 6 males and 4 females. This was 8.77% of a sample of 114 students.

Table 3

Placement of Students in Subject Areas at St. Paul TVI Program

Area*	Male	Female	Total
General Office Practice	1	60	61
Graphic Arts	35	3	38
Machine Tool Processes	16	-	16
Apparel Arts	1	7	8
Auto Body/Mechanics	8	-	8
Medical Laboratory Assistant	-	5	5
Cabinetmaking	5	-	5
Cosmetology	1	3	4
Welding	3	-	3
Production Art	2	1	3
Data Processing	1	1	2
Landscape Technology	2	-	2
Carpentry	2	-	2
Design Technology	2	-	2
Sheetmetal	2	-	2
Hotel/Restaurant Cookery	1	-	1
Dental Technology	1	-	1
Optical Technology	1	-	1
Cooking and Baking	1	-	1
Electo-Mechanical Technology	1	-	1
Traffic Transportation	1	-	1
Plumbing	1	-	1
Chemical Technology	1	-	1
Watchmaking	1	-	1
Highway Technology	1	-	1
Total	91	80	171

*There were 21 students in the preparatory program, 18 males and 3 females. This was 10.37% of a sample of 192 students.

Table 4

Status of Former Students

	Delgado		Seattle		TVI	
	#	%	#	%	#	%
Graduates	40	24.84	71	62.28	138	71.87
Withdrawals	97	60.24	33	28.94	46	23.95
Goal Completions	15	9.31	--	-----	--	-----
Transfers	9	5.59	10	8.77	8	4.16
Total	161	100.00	114	100.00	192	100.00

The percentage of graduates ranged from nearly 25 percent at the Delgado program up to almost 72 percent at the TVI program. The percentage of withdrawals ranged from approximately 24 percent at the TVI program up to 60 percent at the Delgado program. Goal completions accounted for nine percent of the Delgado sample. Transfers made up less than 10 percent of each sample.

Employment and the seeking of employment were the major reasons for student withdrawal from the Seattle and TVI programs (see Table 5). Adjustment difficulties accounted for nearly 59 percent of the withdrawals from the Delgado program.

Placement Status

The percentage of students placed in employment ranged from 28 percent at the Delgado program up to nearly 63 percent at the TVI program (see Table 6). The percentage of students placed in jobs they were trained for was high at the Seattle and TVI programs, 91 and 98 percent respectively. The Delgado program had nearly 67 percent of its students placed in jobs they were trained for. Information was not available on a small percentage of students from each program.

Table 5

Reasons for Student Withdrawal from Post-Secondary Programs

School	Reasons	Number	Percent
Delgado	Adjustment difficulties*	57	58.76
	Employment	15	15.46
	Marriage	7	7.21
	Referral	7	7.21
	To seek employment	6	6.18
	Financial difficulty	2	2.06
	Withdrawal of Vocational Rehabilitation support	1	1.03
	Death	1	1.03
	Total	97	100.00
Seattle	Employment	9	27.27
	Unknown	3	9.09
	Overall adjustment problems	2	6.06
	Personal problems	2	6.06
	Drug usage	2	6.06
	Motivation problems	2	6.06
	Emotionally disturbed	2	6.06
	Learning disability	2	6.06
	Medical difficulties	2	6.06
	Academic failure	2	6.06
	Marriage	1	3.03
	No program available	1	3.03
	Insufficient skill	1	3.03
	Attendance	1	3.03
	Deceased	1	3.03
	Total	33	100.00
TVI	To seek employment	13	28.26
	Uncertain/unrealistic goals	7	15.21
	Attendance/attitude	5	10.86
	Personal/social adjustment	5	10.86
	Employment	3	6.52
	Referral	3	6.52
	Unknown	3	6.52
	Death/illness in the family	2	3.34
	Marriage	1	2.17
	Financial difficulties	1	2.17
	Health problems	1	2.17
	Joined Army	1	2.17
	Family difficulties	1	2.17
	Total	46	100.00

*The following categories were specified in adjustment difficulties: academic difficulties (19), general adjustment difficulties (9), community/education environment (7), social adjustment (5), adjustment to peers (3), personal/emotional adjustment (3), academic/social/community adjustment (2), poor motivation (2), adjustment/family problems (2), personal/social interests interfered with school (2), housing and behavior problems (1), uncooperative/academic problems (1), community adjustment (1).

Table 6

Placement Status of Former Students

	Delgado		Seattle		TVI	
	#	%	#	%	#	%
Placed	45	27.95	68	59.64	120	62.50
(Placed in job trained for)	30	-----	62	-----	118	-----)*
Does not apply	107	66.45	36	31.57	57	29.68**
No information	9	5.59	10	8.77	15	7.81
Total	161	100.00	114	100.00	192	100.00

*Of the Delgado students placed, 66.67% were placed in the job they had trained for. Of the Seattle students placed, 91.18% were placed in the job they had trained for. Of the TVI students placed 98.33% were placed in the job they had trained for.

**The breakdown of the Does not apply category included:

Delgado

86 withdrawals
9 transfers
9 goal completions continuing education
3 graduates continuing education

Seattle

22 withdrawals
10 transfers
3 students continuing studies
1 death

TVI

42 withdrawals
8 transfers
4 students continuing studies
1 referral
1 marriage
1 employment deferred

Geographic Origin

The greatest share of students attending the post-secondary programs originated from the state in which the program is located (see Table 7). Forty-seven percent of the Delgado sample listed Louisiana as their home state. Nearly 58% of the Seattle students said Washington was their home state, and 47% of St. Paul TVI students listed Minnesota as their home state. Many students came from states or countries adjacent to or near the state in which the program is located. The number of different states and countries from which the students came ranged from 12 at the Seattle program up to 26 at the Delgado program.

Table 7

State or Country of Student Origin

Delgado	#	Seattle	#	TVI	#
Louisiana	76	Washington	66	Minnesota	91
Mississippi	9	Oregon	14	Illinois	15
Virginia	9	Idaho	7	Wisconsin	15
Indiana	7	Montana	7	Iowa	10
Texas	7	New York	6	South Dakota	9
Florida	5	Utah	6	Canada	6
North Carolina	5	Alaska	2	North Dakota	5
Wisconsin	4	South Dakota	2	Connecticut	5
Arizona	4	Canada	1	Michigan	5
Tennessee	4	New Mexico	1	Nebraska	5
Illinois	4	Hong Kong, CHINA	1	Maryland	5
Kentucky	4	Ohio	1	Kansas	4
Missouri	3			Pennsylvania	4
Georgia	3			Massachusetts	2
Alabama	2			Florida	2
New Mexico	2			Kentucky	2
New York	2			Indiana	1
Oregon	2			New Jersey	1
Ohio	2			Wyoming	1
Oklahoma	1			Oklahoma	1
South Carolina	1			New York	1
Arkansas	1				
Washington, D.C.	1				
Maryland	1				
Colorado	1				
Iowa	1				
Total	161		114		192

DISCUSSION

Students at the Delgado and St. Paul TVI programs were placed in a limited number of subject areas, and placement tended to be along sex lines. Many Delgado males were found in the drafting and carpentry areas, and 56% of TVI males were placed in the graphic arts and machine tool processes areas. Females in both programs were placed mainly in general office practice subject areas, particularly at TVI where 75% of the female students had been placed in those areas. Male students at Seattle were placed more generally throughout categories and were placed in a wider range of subject areas (31). Female students at Seattle tended to share this widened range, being placed in 16 different areas as compared to Delgado and TVI's seven. Many Seattle female students, however, were also found in clerical and data processing areas. The training of many students in the graphic arts and clerical areas, in particular, is not encouraging since these occupations traditionally held large numbers of deaf individuals before the establishment of post-secondary programs. The presence of many students in these areas also serves to point up that, although there is a broadened range of course offerings available, the number placed in new and different training areas is small.

The percentage of students who graduated from the Seattle and TVI programs was quite high, 62 and 72% respectively. The Delgado program, on the other hand, displayed a 60% withdrawal rate and only a 34% graduation and goal completion rate. Reasons for withdrawal (Table 5) from the Delgado program centered on adjustment difficulties

(59%), and the greatest share of these difficulties was attributed to academic problems. Other reasons listed by the three programs were as varied as the students who attend the programs.

The aggressive placement policies of the Seattle and TVI programs are apparent in the high percentage of former students who hold jobs. An extremely high proportion of these students were not only placed but placed in the job for which they had been trained. The passive role of the Delgado program in placement of its students is reflected in the low (28%) percentage of students placed. The Seattle program makes extensive use of its counselors and of technical/vocational instructors in aiding placement. The TVI program relies mainly on its counselors. Both methods appear to be effective.

The three programs appear to draw students on a regional basis as was intended in the original concept. In effect, the Delgado program serves the southern region of the United States, Seattle the western region and TVI the Middle West. As might be expected, the largest share of students is drawn from the state in which the program is located.

CONCLUSIONS

1. Although there is a broadened range of post-secondary course offerings available, students tend to be placed in a limited number of subject areas, and placement tend to be along sex lines. Males were placed in such "traditional" areas for the deaf as drafting, carpentry, and graphic arts. Females were heavily placed in general office practice subject areas. The Seattle program had placed its students in the widest range of subject areas, both males and females.

2. The Seattle and TVI programs had high graduation rates. The Delgado program, on the other hand, displayed a 34% graduation and goal completion rate and a 60% withdrawal rate. Reasons for withdrawal from the Delgado program centered on adjustment difficulties.

3. The active placement policies of the Seattle and TVI programs results in a high percentage of former students being placed and an extremely high percentage of these students being placed in jobs for which they were trained. The passive role of the Delgado program in placement of its students was reflected in the low (28%) percentage of students placed.

4. The programs draw students on a regional basis as was originally intended. In effect, the Delgado program serves the southern region of the United States, Seattle the western region, and TVI the Middle West. The largest share of students is drawn from the state in which a program is located.

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APPENDIX A

FOLLOW-UP DATA

ID#	NAME	STUDENT'S CURRENT ADDRESS	PROGRAM ENTRY DATE	COURSE OF STUDY WHILE IN PROGRAM	GRADUATE (G) WITHDRAWAL (W) TRANSFER (T)	DATE OF GRADUATION OR WITHDRAWAL	REASON FOR WITHDRAWAL	NAME AND LOCATION OF CURRENT EMPLOYER	PLACEMENT IN JOB FOR WHICH TRAINED

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University of Minnesota Research, Development and Demonstration
Center in Education of Handicapped Children

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